| 4 | NEW YORK |
|--|--|
| WOOD'S NUSEUM. WOOD'S. | PARK THEATRE. THIRTEENTH WEEK |
| Evening at 8. DOMINICK MURRAY In the New Play, THE ORGAN MAN. THE ORGAN MAN. | MR JOHN T. RAYMOND COLONEL MULBERRY SELLERS |
| METROPOLITAN THEATRE. 585 BROADWAY. | IN MARK TWAIN'S DRAMA. Secure seats in advance to avoid the crush. |
| METROPOLITAN THEATRE. MISS AGNES SUPHERLAND, the celebrated Scottish Nightingale. MISS MAGGIE GRAY, the beautiful vocalist. PRANK BELLI, JAMES O'NELL N. B. SHIMER, GILMORE AND SMITH JAMES M'NEVIN. MID. DE ROCHEFOUCAULD, IN THE CELEBRATED PARISIAN CANCAN AND ADD AND AND AND AND AND AND AND AND | RIGHTY-FIFTH PERFORMANCE, TCESDAY, DEC. & COLONEL SELLERS EVERY NIGHT |
| IN THE CELEBRATED PARISIAN CANCAN And all the Metropolitan favorites. MATINEE WEDNESDAY AND SATURDAY AT 2. | SATURDAY MATINER, SPECIAL |
| THEATRE COMIQUE. MR JOSH HART Sole Proprietor | Mr. STUART has pleasure in announcing that he has made arrangements with the celebrated THAUMATURGIST, |
| MR JOSH HART SOLE Proprietor Miss SOPHIE WORKELL, Miss IRENE WORKELL, Miss JENNIE ENGLE, Mr. HIGH FAY, THE KISG OF CARROTS, | Mr. STUART has pleasure in announcing that he has made arrangements with the celebrated THAUMATURGIST, PROFESSOR TOBLS, of the Loudon Polytechnic, who will exhibit some of the recent wonders of science, including the romance of the Cable, at the PARK THEATRE every afternoon, save Saturday. |
| THE KING OF CARROTS. Mr. FRANK DONALDSONas King Monkey A new transformation Scene in the buriesque. The toes was taken from the NEW YORK HERALD of November 2. | Madrigal Music of Sir Henry Bishop, by a quartet. Commence at 3 o'clock. Prices to cents; children and schools, 25 cents. |
| on the escape of the WILD ANIMALS AT CENTRAL PARK. First week of Mr. GEONGE FREDRICKS, Mr. WILL VANE, Mr. WM. NOOXAN and Miss ALICE BATEMAN. Reappearance of Miss KITTY O'NEIL. | BOOTH'S THEATRE. CLARKE'S LAST WEEK. Three Hours of UPROARIOUS FUN EVERY NIGHT. |
| Beappearance of Miss KITTY O'NEIL. First time of the new drama. OLD ADAM: OR, WAITING FOR THE VERDICT. MATINEE WEDNESDAY AND SATURDAY. | JARRETT & PALMER respectfully ask attention to the limit of the prosperous engagement of the great comedian, Mr. JOHN S. CLARKE. |
| CLOBE THEATRE, | Whose appearances cannot be continued after the present week. The excessive hitarity created by his impersonation of the characters of RabMOND TAPE. In H. J. Byron's serio-comic dra- |
| CAMPBELL & MURTHA GRAND RECEPTION TO THE NEW STARS. STANDING ROOM ONLY More popular than ever. Mrs J. Lloyd Haigh, new JENNIE HUGHES. | and of MAJOR WELLINGTON DE BOOTS, in Stirling Covne's capital comedy, THE WIDOW HUNT, |
| GENEVIEVE AND THE GENDARMES | is taken as an expression of popular acceptance, and the same excellent bill will, therefore, be continued. PAREWELL MATINEE NEXT SATURDAY at 1:30. |
| NED FOX AND GOSS. FOX AND GOSS. WILLIAM DEVERE. ADAH RICHMOND, JENNIE WORRELL. CORA ADRIANA, JEAN GREY, NELLY YOUNG. KERNELL AND RICHMOND. | POOTH'S THEATRE. |
| TRIPS TO THE MOON; | MONDAY, DECEMBER is, first night of the new, grand, romantic, spectacular and historical drama, THE HERO OF THE HOUR, written expressly for Booth's Theatre by M. PAUL, FEVAL, author of the "Duke's Motto" and adapted to the American stage by Mr. GEORGE PAWCETT ROWE, |
| Tunarian March and the latest sensation, | The production will be distinguished for MAGNIFI- |
| GRAND OPERA HOUSE. POPULAR The American stage has THIRTY pover before produced THIRTY | Scenery, Music, Costumes, Mechanism, &c. THE SALE OF SEATS will be begun on THURSDAY MORNING next, at eight o'clock. |
| never before produced anything as BEWLDER- TNOLLY BEGUT AND BEAUTIFUL as the pres- ent offering of the impe- | LYCEUM THEATRE SOLDENE. MISS EMILY SOLDENE and her celebrated ENGLISH OPERA BOUFFE COMPANY. EVERY EVENING. SATURDAY MATINEE. |
| PRICES GRAND OF BRAVE | EVERY EVENING. THIS (TUESDAY) EVENING, last performance of |
| THREE HUNDRED BEAUTIES, the dazding armors of the superbly costumed Amazona, the magnificent scenery, de- | THE GRAND DUCHESS, |
| specialties form an at traction the metropolis | TO-MORROW (WEDNESDAY) EVENING, December a, THE ENGLISH VERSION of Herve's beautini Opera, Childeriic, |
| PREVAILING. cannot duplicate. 17. ADMISSION, FIFTY CENTS. Reserved scats 25 cents, 50 cents and \$1 extra. FAMILY CIRCLE (entrance on Twenty-fourth street) THIRTY CENTS. | which will be produced with new Feenery, new Cos- tumes and Appointments and the following Castr- CHILPERIC, King of the Gauls. Muss EMILY SOLDENE SENNA, Court Physician. Mr. b. MARSHALL LANDRY, a Feasant. Mr. J. WALLAGE LANDRY, a Feasant. Mr. J. WALLAGE SIGBBERT. Chilperic's brother. Mr. J. WALLAGE SIGBBERT. Chilperic's brother. Mr. I. QUINE FREDEGONDE, a Peasant Girl Mass A. LYNDBURST GALSUINDA, a Spanish Princess. Miss L. ROBSON BRUNCHAUT. Sigibert's Wife. Miss H. TRAVES ALFRED. Chilperic's Pet Page. Miss CLARA VESEY CLODOMIN, a Noble. Miss L. CARTHEW LEUCASTE, a Noble. Miss ST. CLARE |
| OLYMPIC THEATRE, | LANDRY, a Peasant. Mr. H. LACRENT FATOUT, Grand Chamberlain. Mr. J. WALLACE SIGIBERT. Chiperie's brother. Mr. LEWENS NERVOSO, a Spanish Grandee Mr. J. B. RAE |
| "What everybody says must be true." | DIVITIACUS, fiigh Priest Mr. I. QUINE FREDEGONDE, a Peasant Girl Miss A. LYNDHURST GALSUINDA, a Spanish Princess. Miss I. ROBSON BRUNGHAUT, Sigibert's Wite. Miss H. TRAVES |
| THE ENTERTAINMENT AT THE OLYMPIC IS THE BEST IN THE CITY. The best Burlesque ever produced in New York, AND CROOK, | ALF RED. Chilperics Fet Fage. Miss CLARA VESEZ CLODOMIN, a Noble Miss L. CARTHEW LEUCASTE, a Noble Miss ST. CLAIR Misses Foberts, Brooke, Reid, Beaumont, Pages Lottus, Clarley, Gray, Williams, Nicholis, Chilperic, Bell and Carman. Chilperic, Chilperic, |
| THE BLACK TAN CROOK, | Bell and Carman Chutteries, Druids, Druidesses, Huntsmen, Warriors, Lords, First Chilperic, Matine, &c., Saturday at 1:20. |
| 13 delicate, gushing and captivating young creatures. SUPRIOR TO ANYTHING YET SEEN. Beceived by crowded houses with peal upon peal of LAUGHTER and APPLAUSE. Pirst appearance of the masters of Song and Dance, | Seats secured six days in advance, |
| First appearance of the masters of Song and Dance, Messas, WAYNE and LOVELY. The Madrid Wonder—the "man without bones," Sumor BARTOLLIL The celebrated Concernus Soloist, | W ALLACK'S. Proprietor and Manager Mr. LESTER WALLACK Mr. DION BOUCKCAULT. EVERY EVENING AND SATURDAY MATINEE, in a new and original Trish play, entitled Mr. H. J. MIRE SHAUGHRAUM. LIEDARM THE HARRY BECKET MR. HOLLAND MR. LEONARD, Mr. B. POLK, Mr. E. M. HOLLAND MR. LEONARD, Mr. DEWIN, MISS ADA BY AND SEFFERY'S LEWIS, Mme. PONISI, MISS IONE BURKE, Mrs. SEFFON and MISS BLAISDELL also in the case. Carriages may be ordered at 10:60. Seats secured. |
| Mr. LYNTON GRAHAM. A new and beautini Ethiopian Sketch, called A DARKLY'S DREAM OF MINSTRELSY, introducing a full band of olden time serenaders. | Mr. H. J. MONTAGUE, Mr. JOHN GILBERT, Mr. HARRY BECKETT, Mr. EDWARD ARNOIT, Mr. J. B. POLK, Mr. E. M. HOLLAND, Mr. LEONARD, Mr. EDWIN, Miss ADA DYAS, Miss JEFFREY'S LEWIS, Mme. |
| Mr. GUS WILLIAMS, | three weeks in advance. |
| Messrs Sanford and Wilson, Miss EMMA DAY, Messrs Sanford and Wilson, Miss Alice Harrison, Mr. Thos Granger, Mr. Wm. Courtright, Mr. Wm. Grey, Mr. W. B. Cahill, Mr. James Vinceut, Mr. E. D. Gooding and the Great Company of Comedians. Maunees WEDNESDAY and SATURDAY, at 2. | NEW YORK STADT THEATRE, 45 AND 47 BOWERY. AD, NEUENDORFF. Director TURSDAY, December A. STAR ENGAGEMENT OF |
| MACCABEROBINSON HALLMACCABE. | the favorite of Germany in opera bouffe. DURCHGEGANGENE WEIBER, Comedy in five acts by Sturenburg and Lortzing. |
| m a Revised Edition of his Entertainment, "BEGONE DULL CARE." comprising, with countless additions, the same REFERTOIRE OF MIMICAL ODDITIES, as presented by Mr. MACCABE during his late season of FIFTY NIGHTS at Steinway Hail. | Box office open daily from 8% o'clock A. M. |
| as presented by Mr. MACCABE during his inte season of FIFTY NIGHTS at Steinway Hall. The New Programme will include an entirely Original, Surcastical, Sensational, Double Voicical Melodrama, in | D EYANT'S OPERA HOUSE. WEST 24D STREET. D Every might at 5 and 5 aturday Matthee. ENTIRE CHANG 5 OF BILL. TWO HOURS FUN, BRYANT'S MINSTRELS. Jubiee Concert Tinpanonion. BRYANT'S MINSTRELS. IN AND OUT OF PLACE. BRYANT'S MINSTRELS. "Come where my love lies BRYANT'S MINSTRELS. "Come where my love lies BRYANT'S MINSTRELS. "CREMATION—RED HOT. BRYANT'S MINSTRELS. "CORENTO JOE'S VISIT. "You never miss the water till the well runs dry," Mr. Bob Hart's laughable sketch, A SLIPPERY DAY. Dan Bryant, Sevmour, Reed, Rice, Hart, Hogan, Brockway, &c. Box office open from 9 A. M. to 10 P. M. Soats secured. Bryant's Matinee every Saturday at 2. |
| The New Frogramme will include an entirely Original, Surcastical, Sensutional, Double Voicical Melodrama, in one act and a nail, entitled SIR ROWLAND THE RUFF-UN; in which Mr. MACABE, by a peculiar contrivance of dress, will personate two characters at once (male and jensie), remaining during the final scene upon the stage, | BRYANT'S MINSTRELS. "Come where my love lies BRYANT'S MINSTRELS. dreaming"Rival darsies. BRYANT'S MINSTRELS. CREMATION-RED HOTS. BRYANT'S MINSTRELS. MADAME ANGOT'S KIDS. |
| ROBINSON HALL has been redecorated and ele- | BRYANT'S MINSTRELS COUSIN JOE'S VISIT. "You never miss the water till the well runs dry." Mr. Bob Hart's laughable sketch, A SLIPPERTY DAY. Dan Bryant, Seymour, Reed, Rice, Hart, Hogan, |
| the most comfortable and beautifulsalons in the city. Admission 50c. Reserved Seats, 50c. extra. Ticket Office, Robinson Hall, open daily from 9 till 5. SAN FRANCISCO MINSTRELS' NEW OPERA HOUSE, | Seats secured. Bryant's Matinee every Saturday at 2. TONY PASTOR'S OPERA HOUSE, 201 BOWERY THE COMIC CAWTHORNS. |
| PIRST APPEARANCE OF | TONY PASTOR'S OPERA HOUSE, 201 BOWERY GRAND MATINEE MATINEE MATINEE TO-DAY. LADIES FK. T. THE MUSICAL MAYO, Serio Comic. HOUSE, THE MUSICAL MAYO, Serio Comic. THE MUSICAL MAYO, SERIO MANAGE. THE MUSICAL MAYON. COMIC FARMONICES COMIC. SANGE. |
| in his screaming Banjo Songs. ADD RYMAN'S BURLESQUE LECTURE. MACKIN and WILSON in Songs and Dances. THE GREAT RICARDO. NEW SONGS BY WAM- BULL, RUDOLPH, TREMANE AND PELHAM. BIFCH and BACKUS, in Funny Acts. Street care may be printered at 10. | FREE Comic Pantomine, ROBERT MACAIRE, THIS TONY PASTOR'S COMIC SONGS, EVENING. All the troupe to-day. |
| BOLI: RUDOLPH, TREMANE AND PELHAM. BIFCH AND BACKS, in Funny Acts. Street cars may be ordered at 10. Sechis secured. Moral—Go early. FAMILY MATINEE SATURDAY, AT 2. | TERRACE GARDEN THEATRE, Pitty-eighth street, between Third and Lexington avenues. |
| GERMANIA THEATRE, FOURTEENTH STREET. D. NEUENDORFF. MONDAY, December 8, DIE BEZZEHMTE WIDE SPAENSTIGE, | THE GREAT SENSATIONS, THE FEMALE BATHERS and THE CANGAN at MATINEE TO-DAY AT 2 O'CLOCK |
| Box Office open daily from 8% till 4 o'clock, | TO-NIGHT A: 8 O'CLOCK, Grand Sacred Concert next Sunday evening. GRAND TRIUMPH! THE PHSAW-GHRAUN!! |
| NEW PARK THEATRE. LAMB THIS EVENING, and during the week. Mr. W. A. MESTAYER in THE HOODLUK. | TO BE PRODUCED IMMEDIATELY!!!! |
| PIVOLI THEATRE, | BRING YOUR WIVES, MOTHERS, SISTERS, DAUGHTERS TO TONY PASTOR'S OPERA HOUSE, THIS EVENING. LADIES ADMITTED FREE THIS EVENING. |
| THIS AND EVERY EVENING DURING THIS WEEK, THE MOST GORGEOUSLY FITTED UP PANTOMIME, THE SEVEN DWARPS. | GRAND TRIUMPH: The Phsaw-ghraun!! by one Boosey call'd!!! to be produced immediately!!!! |
| E PANTER AS PANTALOON. | MATINEE TO-DAY. TERRACE GARDEN THEATRE, Virty-eighth street, near Third avenue. |
| BALLET OF TWENTY LADIES. BALLET OF TWENTY LADIES. AMAZONIAN MARGEES. MEW TRICKS. TRANSFORMATION SCENE. KALOSPINTE CHROMAKRENE. The whole under the management of MONS. LA THORNE. | THREE HOURS' PUN AT THE MATINEE TO DAY. TONY PASTOR'S OPERA HOUSE, 201 BOWERY. Everybody and his wife will be there. |
| REMEMBER: THE TIVOLI THEATRE IS THE BEST FAMILY RESORT. | JAY GOULD! THE COMING SENSATION!! |
| THE TIVOLI THEATRE is the cheapest place of amusement in the city. Admission 30. Reserve, 40c. Boxes, \$4. | A RGYLE ROOMS, SIXTH AVENUE AND THIRTIETH A STREET.—SOIREE DANSANTE AND MU-ICAL ENTERTAINMENT EVERY EVENING, COMMENCING AT 9 O'CLOCK. SPECIAL MATINEE EVERY SATURDAY AFTERNOON, COMMENCING AT 3 O'CLOCK. |
| BILLIARDS.—GRAND CHAMPION MATCH FOR \$1,000 between MAURICE VIGNAUX, Champion of america, and CYRILLE DION at TAMMANY HALL. TUESDAY EVENING, DECEMBER 5, 1874. Game 800 points up. French; played on a W. H. Grimth & Co. ** Table, with the wire cushion. Doors open at 6 F. M.; game comences at 7 P. M. Reserved Seats, \$1 50. Ladies free. | JAY GOULD: the coming sensation! |
| TUESDAY EVENING, DECEMBER 5, 1874. Game Sou points up, French; played on a W. H. Grimth & Co.'s Table, with the wire cushion. | SPECIAL DESPATORES PROM WASHINGTON |
| TICKETS, \$1. Reserved Sents, \$1 50. Ladies free. | EVENING TELEGRAM. |
| TAKE YOUR MOTHER-IN-LAW TO TONY PASTOR'S OPERA HOUSE THIS EVEN- ING. The ladies admitted free. Treat har. THE STATE OF THE TERRACE GARDEN | GRAND TRIUMPH! THE PHSAW-GHRAUN!! RY ONE BOONEY CALL-DI!! TO BE PRODUCED INNEDIATELY!!!! |
| REVIVAL OF THE TERRACE GARDEN THEATRE. Natines to-day at 2 o'clock. | PUN WITHOUT LIMIT THIS AFTERNOON AT TONY PASION'S OPERA HOUSE. THE LADIES WILL BE THERE IN FULL FORCE. |
| De Garmo Hall. AVENINGS WITH THE GREAT MUSICIANS Pitth Lecture with Planoforte Recitais. Tuesday evening, December 8. | CARTIER'S MASQUERADE SOIREE, BEETHOVEN HALL, 210 Firth street, THIS (TUESDAY) EVENING. |
| J. M. PATTISON. De Garmo Hall. EVENINGS WITH THE GREAT MUSICIANS. First Lecture with Planoforte Recitals. Tuesday evening, December 8. Subject. "Mozart." Tickets, \$1. | JAY GOULD! the coming sensation!! |
| TO BE PRODUCED IMMEDIATELY III | MIRTH. MUSIC AND MIMICRY.—DR. J. J. VIL- LERS, American Humorist, at the fine Armory of IWELETH REGIMENT, Forty-fifth street and Broad way, Wednesday evening, December 2. Tickets at Ar- mory and music stores. |
| A SSOCIATION HALL.—VANDENHOPF, LAST MATINEE but one THURSDAY, December 19, 11-20 A. M., RICHARD HL.—THE HISTORY AND THE PLAY. Tickets at Pond's, 39 Union square, and at Gurley's, under hall. | JAY GOULD! THE COMING SENSATION!! |
| CIRANO PRICEMPILI | NO CHARGE FOR LADIES THIS EVENING. TONY PASTOR'S OPERA HOUSE, 201 BOWERY. THE CHEAPEST SHOW IN THE WORLD. |
| by one Boosey call'd !!! to be produced immediately!!!! | GRAND TRIUMPH! The Phaw-ghraun!! by one Boosey call'd!!! to be produced immediately!!!! |
| A MATRUR MUSICIANS—BRASS AND STRING, TO A play for improvement and pleasure, with amateur band. Address MUSIC, box 176 Heraid office. JAY GOULD: THE COMING SENSATION: | Cartier's Masquerade soiree, BEETHOVEN HALL, 210 Firth street, THIS (TUESDAY) EVENING. |
| | TERRACE GARDEN THEATRE FEMALE BATHERS and cancan. |
| THE GRAND PANORAMA OF BUNYAN'S PIL- grim's Progress will be exhibited on Tuesday and Wednesday evenings, December 8 and 9, at the Re formed Church in Thirty-fourth street, west of Eighth avenue, at 80 clock Admission, 35c.; children, 20c. TAY GOULD: | JAY GOULD! THE COMING SENSATION!! |
| GRAND TRIUMPH: THE PHNAW-GURAUN! | FANNY F. TAVERNER GRAHAM'S DRAMATIC IM- personations in scenes from Shakespeare's "Maca- beth" to-hight, at Association Hall, corner of Twenty- third street and Fourth avenue. Tickets optained at GURLET", under the Hall. Reserved sears 75 cents. |
| TO BE PRODUCED IMMEDIATELY!!!! | NOTICE TO SHOWMEN AND THEATRE MAN- agers.—a metal Biodel of the city of Paris, as it was previous to the Franco-Prussian war, will be sold low if applied for at once. Address City OF Paris, |
| SU AVENUE CARS TO TERRACE GARDEN THEATRE. MINUTE MATINEE TO-DAY. | DOX 120 Heraid Direc. |
| CHAND ORGAN CONCERT—CHURCH OF THE Holy Trinity, Madison avenue and Forty-second street, Wednesday, December 2, 1874, at 4 P. M. Organial, Henry Carter, of Trinity church, New York; vocalist, Mrs. J. M. Bavidson, ontrakio, Admission, 250.; package of ten ticketa \$2; to be had at all music stores and at fits church. | POSTERS, PROGRAMMES, DISTRIBUTION BILLS, Circulars, Tickets, Coupons, Wood Cais, Littographic Portrada and every variety of Theatrical Printing prompty, neatly and cheapit done at the MATRO-POLITAN PRINTING ESTABLISHMENT, Herald Build- |
| package of ten ticketa \$2; to be bad at all music stores and at the church. TAY GOULD! | A MERICAN INSTITUTE. PROF. JUDD |

THE COMING SENSATION!!

UST PUBLISHED-"DANKS ANTHEM SERVICES,"

is now performing the arduous task of walking 500 mile within six and one half days. Promenade concerts at ternoon and evenings by Gumore's sand. Admission 500

| YORK | HERALD, TUESDAY, DE |
|---|---|
| | P. T HARNUN'S GREAT HIPPODROME AN WORLD-RENOWNED MENAGERIE! |
| D LERS. | PETE AT PEKIN PETE AT PEKIN THE PETE AT PEKIN THE PETE AT PEKIN MARVEL OF SPECTACULAR PAGEANTRY! |
| he crush. | INDIAN LIFE INDIAN LIFE |
| SDAY, DEG & | WONDER OF EQUESTRIANISM! JACKLEY FAMILY JACKLEY FAMILY JACKLEY FAMILY |
| | WORLD'S CHAMPION ATHLETES! |
| ing that be has | CHARIOT RACES! HURDLE RACES! |
| ibit some of the romance of the afternoon, save | ONE HUNDRED LADY RIDERS! TWO HUNDRED LADY ATTACHES! FOUR HUNDRED ARABIAN HORSES! SIX HUNDRED WILD BEASTS! FIVE TRAINED ELEPHANTS! SIX LIVING GREAFES! TWO MONSTER RLACK RHINGCEROSES! TWO MONSTER RLACK RHINGCEROSES! THE LARGEST EVER CAPTURED! Doors open at I and 6.31 Performances at 2:20 and wild animals led at the close of alternoon entertail ment. Eox office open from y to 4. Seats secured at days in advance. General admission, 50 cents. Chi dren under ten, 25 cents. Extraordinary attractions i preparation for the holidays. |
| e quartet. | SIX HUNDRED WILD BEASTS! FIVE TRAINED ELEPHANTS: SIX LIVING GIRAFFES! TEN CAMELS! SIX LLAMAS |
| VERY NIGHT. | TWO MONSTER BLACK RHINOGEROSES! TWO MONSTER BLACK RHINOGEROSES! THE LARGEST EVER CAPTURED! Doors open at 1 and 6.31 Performances at 2.50 and |
| at attention to | wild animals field at the close of atternoon entertail ment. Eox office open from 8 to 4. Seats secured at days in advance. General admission, 50 cents. Chi dren under ten. 25 cents. Extraordinary attractions i |
| oy his imper- rio-comic dra- | 5TH AVENUE THEATRE. 5 Proprietor and ManagerMr. AUGUSTIN DALL EVERY NIGHT AT 8. |
| TS, in Stirling | YORICKI |
| continued. | Shakespeare Mr. CHARLES FISHEL Yorick, a Comedian Mr. LOUIS JAME Walton Mr. F. HARDENBER Edmund Mr. RINGGOL |
| of the new. | the great romantic sensation of the Spanish stage. Shake-speare Mz CHARLES FISHEL Yorick, a Comedian Mr. LOUIS JAME Watton Mr. F. HARDENBERGL Edmund Mr. RINGGOL The Author Mr. JAMES AUTHORITY MR. JAMES ART |
| of the new, aldrams, UR, by M. PAUL adapted to FCETT ROWS, | A YORICK MATINEE SATURDAY, AT 1%. Carriages may be ordered for 10:30. |
| for MAGNIFI- | MRS, F. B., CONWAY'S BROOKLYN THEATRE. MONDAY, DECEMBER 7, EVERY EVENING DURING WEEK, SATURDAY MATINES AT 2, the gitted artisto, MISS CHARLOTTA THOMPSON, as JANE EYRB. |
| ING next, at | MISS CHARLOTTA THOMPSON, as JANE EVRB. |
| SOLDENE. | GO THIS AFTERNOON FEMALE BATHERS AT TERRACE GARDEN THEATRE. CAUSE'S SOIREES DANSANTES; MASONIC HALL |
| PANY. AY MATINEE, formance of | SAUSE'S SOIREES DANSANTES; MASONIC HALL S 114 and 116 East Thirteenth street this Tuesda: evening, and at Irving Hall every Saturday from 8 to 12 PIANOFORTES, ORGANS, &C. |
| , December & | A FINE ASSORTMENT OF NEW AND HANDSOME |
| nery new Cos | cash. |
| mery, new Cos- in Cast:— ILY SOLDENE MARSHALL H. LAURENT | A. Pianos of our own make; also for sale, a number of the second hand Pianos, in perfect order. William KNABE & CO., No. 112 Fifth avenue, above Stricenth at |
| J. WALLACE Nr. LEWENS Mr. J. B. RAE Mr. I. QUINE | A MAGNIPICENT STEINWAY & SONS FOUR round corners 7% octave agrafie Pinno; cost 1,000 for less than halt. D. KARKUER. 352 Bowery, near Third street, first floor. |
| LI,Y SOLDENE MARNHALL H. LAURENT I. WALLACE Nr. LEWENS Mr. J. B. RAE Mr. J. QUINE SI. ROBSON SI H. TRAVES L. CARTHEW L. CARTHEW L. CARTHEW L. CARTHEW O. Chilperic, ors, Lords, | A GREAT CHANCE.—700 PIANOS, HALF PRICE order administrator G. Barmore's Estate. 322 Bleecker street: indorsed by all the great living artists second hand Pianos cheap. |
| is ST. CLAIR ont, Pages | A ROS-WOOD PIANO AND STOOL, \$100: BEAU A tiful overstrain bass full form frame Pianaforte. \$175 Pianos to reint, \$5 per month; instalments received GOLL:SMITH'S, 25 Biescker street, near Bowery. |
| ors, Lords, | A BEAUTIFUL ROSEWOOD PIANO, \$110; 73, octave, carved legs, overstrung, every improve |
| ER WALLACK | A BEAUTIFUL ROSEWOOD PIANO, \$110; 73; octave, carved legs, overstrang, every improvement; atmost new; sacrifice; instalments taken, \$13 monthly; rent, \$5. 107 West I wenty-third street, corner Sixth avenue. |
| MATINEE, entitled ILBERT, Mr. | A MAGNIFICENT 74 OCTA—E PIANOFORTE, FOUR graffic celebrated maker; cost \$50, for \$20. Residence 2t East 20th street, near Broadway. |
| ILBERT, Mr. DIT, Mr. J. B. IARD, Mr. ED- LEWIS, Mine. TON and Miss | AN ELEGANT HAZELTON PIANOFORTE, FOUR improvement, sacridee tor cash or instalments, over trent. J. Blodle, 13 Waverley place, near Broadway. |
| Seats secured | AT SOHMER & CO.'S, 149 EAST FOURTEENTH Fignos, a short time used, of different makers, at extra |
| Director | low figures; also Pianos to rent. A T 258 WEST TWENTY-THIRD STREET, A POWER rul, brilliant sound Bradbury Planotorte; has all modern improvements: overstrung bass; cost \$975, for \$250; Stool, Cover; in use since April. |
| bouffe. iR, i Lortzing. NANNI M. | . BEITATE PANILY WILL SELL THEFE SIRCAN |
| Personal Physics Const. No. | A four round Decker & Bros. Plano forte at a sacrifice; a brilliant tone 7% octave, richly carved rosewood case, full agrafic overstrung pinno, having all improvements; printed guarantee, bill of sale; cos 5975, for \$250, N. B. Stool, Cover, box for shipping. Call for two days at private residence, 2:0 West Twenty-first street. |
| 23D STREET. tinee. URS' FUN. L'inpanonion. OF PLACE. my love lies Rival daraiss. —RED MOT. GOT'S KIDS. E'S VISIT. l runs dry." | A PRIVATE PAMILY WILL SELL THEIR BRIL hant toned 7% chambers juil agraffe Planotorte, at |
| RED HOT. GOT'S KIDS. E'S VISIT. I runs dry." | A PRIVATE PAMILY WILL SELL THEIR PRIL liant toned 7½ chambers full agrade Planotorte, al modern improvements, carved legs and case, cost \$50 cash, for \$5.30; also Durham 7½ octave Planotorte for less than half cost; \$500, Cover, Music Cabinet; box for shipping. Call private residence 120 West 23d st., nea 6th av. |
| l runs dry." (PPE tY DAY. Hart, Hogan, M. to 10 P. M. aturday at 2. | Old Williams |
| 201 BOWERY ORNES, lymnasts. | A MAGNIFICENT GRAND SQUARE 75 OCTAVE four round corners, rosewood Planoforte, all moder improvements, pat ni agraffe, brilliant tone, nearly new, cost \$1,500, for \$275; Stool, Cover; bux for shipping a lot Parlor, Chamber Furniture; a secrifice. Residence 103 West Twenty-eighth street, near Sixth avenue. |
| lymnasts. o Comic. oge Vocalist. off. HOEY, tomimist. off. MACAIRE. C SONGS. | AN EL GANT PIANO, \$100; A BEAUTIFUL FOUR round corner Plano, carved legs, agrafe troble &c., &c., at a great bargain. PEEK & SON. 11 Clinton place (Eighth street), near Broadway. |
| ay. | A LADY WILL SELL FOR \$100 A MODER? Chickering & Sons' Planotorte, including Stool perfect order; sweet, powerful tone. 28 Third street near Bowery. |
| and Lexington | BURDETTFOR THE HOLIDAYS- ORGANS |
| LOCK itng. | Burdett Elegant new cases. Organs Burdett Easy instalments taken. Organs Burdett Parlor Organs, \$50 and upward. Organs Burdett Secondhand Instruments very cheap. Organs Burdett. Fine new Franco, only \$250. Organs BILLINGS & WHEELOCK, 14 East Fourteentn street. |
| LYIIII | BILLINGS & WHEELOCK, It East Fourteenth street. BOBHM FLUTE (STERLING SILVER). AS GOOD At new; must be sold cheap. Address 25: East Fifty eighth street. |
| S. SISTERS, OPERA | BARGAINS THIS MONTH.—A LARGE STOCK OF Pianos, from \$75 to \$250, payable from \$5 to \$4 monthly; upright and square Pianos and Organs to rein \$5 upward. BETTS warerooms, 788 Prodeway, corne |
| TITED FREE | senni succe |
| EN THEATRE. | OHICKERING SQUARE AND UPRIGHT PLANOS FOI rent — A 7 octave overstrung Plano, \$150; rent \$5 a 7 stop Organ, \$83. GORDON & SON, 13 East Fourteenth street. |
| enue. ER TO DAY. 201 BOWERY. | FOR SALE-A VERY HANDSOME ROSEWOOD Plano: double round; fine tune; first class; will be sold at less than half its cost. Apply at 156 West Forty ninth street. |
| | MANUFACTURERS OF PIANOFORTES WILL FINI it to their interest to obtain estimates from the METROPOLITAN PRINTING ESTABLISHMENT. II Broadway, before having their printing done elsewhere |
| D THIRTIETH ND MU-ICAL | \$290 FOR BEST NEW 7% OUTAVE PIANOS; 1 Circulars malled. U. S. PIANO CO., 810 Broadway, N. Y. |
| D THIRTIETH ND MUSICAL COMMENCING VERY SATUR O'CLOCK. | 500 PIANOS AND ORGANS—NEW AND SECOND hand, of first class makers, will be sold at lowe prices for cash, or on installments, or for rent, in city of |
| | 500 PIANOS AND ORGANS—NEW AND SECONI band, of first class makers, will be sold at lowe prices for cash, or on instainents, or for rent, in city of country, during these bard times and the Holidays, by Horace Waters & No., 481 Broadway, than eve before offered in New York, Agents wanted to sel Waters' New Scale Pianos, and Concerto Organs; illustrated catalogue mailed, great inducements to the trade a large discount to teachers, ministers, churches, lodges schools, &c. |
| WASHINGTON | |
| TELEGRAN. | A. J. SAUSE'S DANCING ACADEMIES.—CLASSES At Masonie Hail, 114 East Thirteenth street; Brevort Hail, 114 East Trifteenth street; Less Sons at any hour. CIECULARS at private academy. |
| OON | SIZ EAST DICYGILL SHOOK |
| ULL POBCE. | A -DODWORTH'S PRIVATE CLASSES FOR DANC street, open for the season. Morning and afternoon classes for lacies and children Evening classes for gentlemen. Send for a circular. |
| <u> </u> | A -CARTIER'S DANCING ACADEMY, PLIMPTON A. Building, intersection Stuyvesant and Ninti streetClasses every Monday and Thursday. Privat lessons in Girde Waltz a specialty. Reception Dansant Thursday evening. |
| R. J. J. VIL- fine Armory of et and Broad Tickets at Ar- | |
| | BROOKES' DANCING ACADEMY, 351 BROOME ST. All the fashionable Dances in one course of lession. Afternoon classes for ladies and chiliren; evenings for gentlemen. PRIVATE INSTRUCTION at all hours. DALLET MASTER DUMAR'S DANCING ACADEMY |
| ENING. 201 BOWERY. | BALLET MASTER DUMAR'S DANCING ACADEMY 24 West Fourth street—Classes open. All dance aught perfectly in one quarter. Six fashionable dance aught perfectly in aix private lessons. |
| | MR. AND MRS. HLASKO'S ACADEMY FOR DANG ling, 1,454 Broadway.—Morning and afternoo- classes for ladies and children; evening classes for gen tiemen. |
| street, | MR. TRENOR'S ACADEMY OF DANCING, Lyric Hall, 723 Sixth avenue, Reservoir square, Reception Dansante every Friday evening. |
| ALE BATHERS | THE LECTURE SEASON- |
| CANCAN. SENSATION! | A.—SPECIAL LEGITURE EVERY NIGHT, AT A. o'clock, at the New York Museum of Anatomy, 6i Broadway, between flouston and Bleecker streets. WANTED TO PURCHASE. |
| RAMATIC IM- speare's "Mac- ner of Twenty- | LAW BOOKS WANTED-WENDELL & JOHNSON and Cowen & Hill's Reports; also Barbour; second hand. Address stating price, B., box 4,402 Post office. |
| ats 75 cents. | W ANTED TO PURCHASE A PRINTING OFFICE O Half Interest in one; have constant work for i Address full particulars to PUBLISHER, box 191 Heral office. |
| EATRE MAN- y of Paris, as it ar, will be sold IIY OF PARIS, | WANTED-A FIRST CLASS MAHOGANY SIDE board, new or second hand. Address, with price ac., C. FOSIER, Herald Uptown Branch office. |
| UTION BILL; I Cuis, Litto- heatrical Print- it the METEO- ', Herald Bund- | WANTED-CHEAP FOR CA H-TO TAKE WES: Jos Lots of Dry Goods, Carpets, Poots and Shoe Hardware, Mu local Instraments, Notons, Jewelr, roaps, Ac., tanything that is in good congition. Addre H. C. F., Heraid onlice. |
| , usian build- | WANTEDA SECOND HAND SAFE ABOUT PIV feet high. Address, box 87 Post office; static |

TRANSIT OF VENUS.

To-Day.

The First Transit Observed by a Young English Astronomer.

ANOTHER AMERICAN STATION CHANGED.

Professor Parkhurst on the Advent of the Grand Phenomenon.

At fifty minutes past eight o'clock this evening the long and eagerly sought phenomenon of the transit of Venus will begin. The planet will steal forward toward the eastern and upper portion of the sun's rim, come in contact with it and then push its way slowly across the sun's face, on which it will appear projected like a small black speck. Venus will occupy four hours and three-quarters in journeying across, and at half-past one o'clock A. M. on to-morrow morning the planet will pass away from the disc leaving no track behind. Few could believe that little though the velocity of the planet appears, it nevertheless flies through space at the rate of 77,200 miles per hour, or 1,290 miles a minute. Though it looks a tiny spot when viewed with the naked eye, it is nevertheless, almost as large as our own earth. The sun will have set upon our shores when the transit commences, but while our portion of the globe will be turned from the great luminary other sections will be illumined by his rays, and in these regions he will be observed as the planet crosses by thousands of astronomers throughout the world. During the transit of 1769 the occurrence was visible on every part of this continent, but now it is our turn to lose sight of the appearance. In 1882 we shall enjoy the lavor of being enveloped in

daylight during the occurrence of the transit that is to take place in that year. As the nature and results of the eventful circumstance and the history of the expeditions, past as well as present, have already been exten sively detailed in the Herald of November 30 and December 7, it is needless to revert to them here. It may be well, however, to recall to the reader's memory the extraordinary and romantic circumstances under which the first transit of Venus was observed. Transits have, of course, occurred four times every 243 years since the creation, and no doubt exists of the ancients having noticed some of them, as they were accustomed to watch the constantly shirting positions of the morning and evening stars. There are evidences of these observations still extant. On an earthen vessel in the British Museum are carved the movements of the planet Venus during a period extending back to the sixth century before the Caristian era. Still there is no transit pictured thereon. The first weil authenticated observation of a transit of Venus was made in 1639 by Rev. John Horrox, a young English curate of an obscure village near Liverpool. A transit had taken place eight years previously in accordance with the prediction of Kepier; but it was night time in Europe when it occurred, and consequently it was not observed by any persons known to nistory. One of the strange facts connected with Horrox's observation was that he was not aware of the uses that could be made of the observations. Halley had not then propounded the celebrated method of ascertaining the sun's distance, nor had Delisie existed. Kepler predicted the transit of 1639, but his estimate of the moment at which

the transit would begin was some hours wide of

the mark. In 1633 young Horrox was placed in

Emanuel College, Cambridge, where he soon gave evidences of mathematical and astronomical

genius. When he reached his eighteenth year he had mastered all the problems of mathematics as the science then existed, and betook himself to the study of the movements of the heavenly spheres. Being of a religious turn of mind, he found in the vasty regions of the stellar universe, the most glorious and sablime display of the Creator's majesty, believing, like many others, that the blest abodes were fixed beyond the stars. He reviewed Kepler's calculations of the date of the transit and found them slightly erroneous. He communicated his discovery to two intimate iriends, and when the month of December came round he made ready to verily his predictions by watching the sun throughout the day. The morndarkened his little room and admitted the sun's rays through a lens, which projected an image of the sun's disk on a white sheet of paper It was the Sabbath day and the sky was bright, the sun beaming calmly down upon the screen of the young astronomer. From the rising of the sun until nine o'clock he watched the image, but no planet appeared. While he was on the tiptoe of expectation the healtated for a moment, overcome with conflicting honor his Creator more by repairing to His house of worship or by verifying the beneficent and imcelestial orbs revolve. He decided, however, to visit his flock in church. At ten o'clock he returned to his house, but found no speck dotting the surface of the sun's image. "I ob rise to nine o'clock; again a little before ten o'clock, and lastly at noon and from one to two o'clock, the rest of the day being de-voted to higher studies." In the afternoon clouds rolled suilenly by, obscuring the image on the screen. Finally the skies grew clear, and lo! young Horrox beheld the pitchy shadow of Venus crawling forward upon the solar disk. The rap-turous emotion with which he suddenly viewed while but ultimately recovering himself, he pro ceeded to make measurements of the planet's position on the screen, which paved the way for the prilliant calculations of more modern times. transit in writing to his friends the ecstatio convictious that glowed in his enthusiastic brain. Few years clapsed before the career thus brightly begun was brought to a speedy close. Horrox the scientific world that was universally regretted. Could be have beheld during his last moments the varied appliances and the gigantic preparations of modern acientists for the observation of the same phenomenon, not merely in darkened rooms throughout England, but from observatories in the four quarters of the globe, he might have quitted the sphere of his earthly existence with

death sent through his frame. ANOTHER CHANGE IN THE AMERICAN STATIONS. A special despatch recently received from friends of the parties attached to the New Zealand expedition states that Dr. Peters, of Hamilton College, who is in charge of the expedition, has changed the location from Bluff Harbor to Huenstown, 120 miles in the interior, south latitude 45 degrees, west longtitude 16s degrees 40 minutes, elevation 1,200 feet above the level of the sea. This change was made owing to the poor prospect of clear weather at Bluff Harbor.

one pang less than those which the agontes of

PROFESSOR PARKHURST'S VIEWS.

As the critical moment approaches to which astronomers have looked forward with so much inerest for a century the desire on the part of the intelligent public to know more about the transit increases day by day. Referring your readers to the article published in the HERALD of last Mon-

WANTED. A SECOND HAND SAFE ABOUT PIV feet high. Address, box 87 Post office; stating price, maker, and when it can be seen.

EXCHANGE.

WILL EXPHANGE-33.00 WORTH OF DRY GOODS for First Mortrage; Lota near by, free and clear, for merchandise; brown stone in Broozym for small Mouse. L. Parthand, 355 Broozway, room M.

be considered from a different point of view.

Apparent motion depends, first and chieny, upon distance, and secondly, upon velocity. Many of the stars are so distant that all the observe The Event to Begin tions of astronomers have not yet determined even the direction of their apparent mo-tion. The most rapidly moving and therefore probably the nearest stars, are the com ponents of the binary star 61 Cygni, which moves over a space equal to sun's diameter in about three centuries. The most distant planet of the solar system, Neptune, moves over the same space in about a year. The nearest planet, Venus, in its transit moves over the same space in about eight bours. The moon, a bundred times nearer, moves over the same space in an hour. The earth, the centre of which is sixty times nearer to us than the moon, moves over the same space in about two minutes, as may be seen by watching the western horizon at sun set, as it rises and covers the comparatively stationary disk of the sun.

As the different celestial bodies pass over each other in their motions they produce the phenomena styled transits and occultations. When the nearer body is apparently the larger of the two the more distant body is occulted. As the sun is so brill iant as to prevent our seeing any other body be-yond it, in immediate contact with it, and as the disks of the planets are so small, and their motions comparatively slow, occultations are almost exclusively of stars and planets by the moon. When the nearer body is apparently the smaller of the two, it produces a transit of the smaller body over disk of the larger. Lunar eclipses, as shown in class of phenomena, and the same is true of the eclipses of the satellites of Jupiter. In solar eclipses the light of the sun is so obscured that whether the apparent size of the moon is smaller or greater the phenomenon is not called a transit or an occultation; but solar eclipses, or even the daily setting of the sun, obscuring its light by the interposition of the body of the earth, may be regarded as phenomena of the same class with the transit of Venus, a class of phenomena too common to attract attention.

The astronomers of the world to-morrow, if the sky shall be sufficiently clear, will see, at first, near the centre of the disk of the sua, two small spots. Measurements at different hours will show that they are moving slowly toward the west, but the most careful measurements, made in Siberia and in Oceanica, will fail to detect any difference in their position upon the sun's disk as seen from these widely separated stations. These spots, therefore, belong upon the sun itself. Then there will appear, at about nine o'clock P. M., of New York time, a larger spot, circular, and moving more rapidly, also toward the west. This will be the planet Venus in its transit. In less than five hours Venus will have crossed the disk and passed away from view. The smaller spots, meanwhile, will have moved toward the west, from the rotation of the sun upon its axis, only about one-fortieth part of the sun's diameter. The astronomers will pack up their instruments and return home, no wiser than they went; but they will bring with them materials which, when properly compared and reduced, will give, more accurately than it is now known, the distance of the sun from the earth, and, therefore, the scale by which we may compute the distances of the planets and even of the nearer fixed stars.

During the eventful hours when the Eastern Hemisphere will bristle with hundreds of parallel telescopes, and when thousands of eager eyes will be watching the transit, no thought will arise as to the practical use of the phenomenon, any more than looking at a beautiful painting or in listening to strains of delightful music we attempt to calculate in what way it will yield money to our purse. A million dollars is not too much to spend for so important an advance in scientific knowleige. But lest, by and by, when we are to have a transit of our own, and shall want further appropriations, it should be said that we have spent enough for mere intellectual amusement, yielding no return, let me try to explain one of the ways in which the observation of the transit of Venus will immediately repay, in money, many times the out-

It has been already shown that, essentially, we observe the transit of Venus to obtain the distance of Venus, because we can obtain it relatively with four times the accuracy that would attend observations upon the parallax of the sun directly at four times the distance, and because, by the aid of Kepler's law, from the distance of Venus we can obtain with the same relative accuracy the distance of the sun. By having this fulcrum, or stepping stone, we thus increase by four times the accuracy of the determination of the sun's distance, leaving out of view the peculiar advantages, already shown, which will enable us to determine the parallax of Venus with a less margin of error than in the case of the sun.

moon possesses in a much greater degree. Consequently, the distance of the moon from the earth is known, from direct observations of its parallax, sixty times as accurately as the distance of the sun. We know also the average feet of the attraction of the sun upon the motion of the moon in its orbit. This effect varies with the position of the moon in its orbit, the sun's attraction being greater at new moon, when the moon is nearer to the sun than is further from the sun. If the sun were, as for merly taught, 400 times as far from the earth as on, its distance from the new moon would be 399, and from the full moon 401. As the attrac tion varies with the square of the distance, the attraction at new moon would be to that at full is, about one-hundredth part greater. But if the sun is only 880 times the distance of the moon, nore nearly corresponding to later determina tions, its attraction of the new moon is about one For it must be remembered that in reducing the distance of the sun from 96,000,000 to 92,000,000 miles agtronomers have not reduced the moon's distance by a single mile, that having been obtained from entirely independent observations and computations. It is evident that we cannot know with accuracy w much the moon's position is varied by the attraction of the sun in different parts of its orbit sun. Pursuing the opposite course, Hansen, from the effect of the attraction of the sun upon the moon's position in different parts of its orbit, came to the conclusion that the distance of the miles, agreeing with that obtained from observa-tions of the parallax of Mars and in other modes, and now adopted in the "American Nautical

Almanac." It is upon the knowledge of the exact position of the moon, predicted in the "Nautical Almanac" three years in advance, that the navigator must ecessarily rely for salety from hidden rocks and dangerous coasts. The increased safety in navigation, not only with regard to life, of which we think so little, but with regard to money, of which, as a commercial people, we think so diture upon the transit expeditions of 1874, and all that can be asked for in 1882, when we shall have our turn: for it is a fortupate circumstance in these transits, which occur only twice in a century, that there is always an interval of seven hours in June and of eleven hours in December, so that nearly the whole world can witness either one or the other of the two transits, which are separated by an interval of

In a lew days we shall have telegraphic announcements from some of the stations; in a few months the expeditions will be returning home. We shall soon have conjectures and estimates with regard to the result; out it is not expected that the final result will be reached in less than two years. As the problem has been explained so of a triangle, the diameter of the earth forming the base line and the displacement of the disk of Venus being the angle at Venus, the solution of which can be accomplished in ave minutes by day for a general explanation of the phenomena the aid of trigonometrical tables, the question of the transit and of the principles by which it will naturally arise, what the astronomers

may be used to give us the distance of the sun, I will be about. I do not speak with authority. I shall dwell only upon particular points which may have not been in consultation with them, and, indeed. I hardly think there has been much consultation with regard to the reduction of the observations; but I think I can make some suggestion which will satisfactorily account for much of the delay. It must be remembered that in explaining the

principles of the transit, for the sake of clearness all disturbing elements were carefully eliminated

and left out of view. Imaginary observers have

been located at all conceivable places, from the North Pole to the South Pole, and even at the centre of the earth and centre of the sun. The earth has been imagined to stop its rotation upon its axis. Astronomers have been expected to measure by a two-toot rule the distance of the several stations, as seen from the centre of the sun, upon a line drawn through the centre of the earth. As to such slight performances as inducing clocks to keep absolutely perfect time, inducing observers to record with absolute precision phenomena which they may imperiectly see, and inducing Venus herself to take the position and to walk the precise track marked out for her by the "Nautical Almanac," they were, of course, not worth mentioning. But when our American observers come home with their figures and their photographs they will have a far different problem to deal with. They must determine the longitute of the different stations, and reduce all their observations to Washington time. They must determine the effect of the rotation of the earth at the time of each observation and make allowance for it, as well as for the several positions. They must apply corrections for personal equation of observers, i of different instruments of observation and for the error of the different clocks and chronometers. In some of the observations, such as the measure ment of the distance of the centre of Venus from the centre of the sun, at a low altitude, the difference of refraction must be allowed for. The photographs must be measured and reduced to the form of figures. After these and other preliminary - corrections have been applied the observations themselves must determine the error of the Nautical Almanac posttion of Venus, the error of its motion in right ascension and in declination and the error of its apparent diameter, and, if not otherwise determined, also the corresponding errors of the sun's place, motion and diameter. These corrections will be combined with the effect of the difference of parallax of Venus and the sun, while the latter will affect each observation differently. After eliminating all possible sources of error there will remain especially those depending upon the positions of Venus and upon the parallax, and all these undetermined quantities must be reduced to equations of condition, the coefficients of which must be determined for each separate observation. Then by the method of least squares these equations of condition must be solved, giving the best representation possible of the observations. But these results will only be provisional. The astronomers of other countries will, I presume independently to a great extent, pursue a similar course, and each will arrive at provisional results from their own observations. Upon comparison of the results reached by

different nations there will be found discrepancies in all the elements. Then will come the last great work, combining all. New values of all the undetermined quantities will be selected, guided by the several results, and with those values the theoretic time of each observation will be computed and compared with the observed time. All the observations of all nations will be reduced either singly or in groups, to a symmetrical form, for the final equations of condition, to eliminate, as far as possible, the remaining discrepancies between computation and observation. It is not until these final equations of condition shall have been solved by the method of least squares that the final determanation can be said to have been reached.

Whether the general plan which I have roughly outlined shall be followed or a widely different plan there is no royal road by which the labor can be saved; and I think it will be lound that have underrated rather than exaggerated the difficulties. We may hope in a few months to know whether the observations of the transit will sustain the modern de-termination of the sun's distance, ninety-two millions of miles, or the former determination, ninety-five millions; although, after the rediscus sion of the observations of 1789, the latter seems hardly possible. Should the observations everywhere be successful, little would seem to be left for the next transit; but it is by no means certain that the experience in these observations may develop new methods, so that, eagerly as the transit of to-morrow has been anticipated, it may be that astronomers, the world over, will, with unabated interest and zeal, look forward to the transit of December 6, 1882.

HENRY M. PARKHURST. NEW YORK, Dec. 7, 1874.

THE ARCTIC EXPLORATION.

TO THE EDITOR OF THE HERALD:-Several days ago you published an interesting article upon the forthcoming British expedition to the North Pole. Perhaps it is possible for an which will be of value to those who are engaged in organizing the expedition.

An Englishman by the name of Smith, one of the inventors of the screw-propeller, has recently adopted at arrangement whereby the instrument of propulsion is thoroughly protected: he places the screw-propeller in a tunnel.

An Englishman by the name of Ewbank, an eminent hydraulic engineer who passed the latter portion of his lie in this Republic, demonstrated that the exhaust steam from engine cylinders could be made to yield much of its potential energy beneath other pistons connected with the same shaft. That is to say, he condensed the exhaust steam in those other cylinders—he utilized the atmospheric pressure—and obtained twenty-five per cent more power from a given quantity of steam than can now be obtained with he best type of compound engine, the motor nearest to perfection. His engine required more space than the compound. an Arctic exploring expedition each grain of fue becomes more valuable than gold.

Jonathan has many ideas and a first class stock of notions. He has a "lightning saw" that can cut a ship canal through ice ten leet thick; a portable blower, with hose and nozzle, to agitate freezing up too soon; a perforated sipe to place along either side of the ship's keel, w blow air bubbles up along her hull, and in that way prevent his terrible lowness from nugging her too much; a method of blowing new dry show from decks, boats, rigging, &c.; a self-regulating wind mill can do all and much more than has been mentioned. He has a good manual power multiplier, whiring table and system of pipes of copper filled with linseed oil, the whole affair to be slung on to the man's back like a scissorgrinder's machine. With this combination a man at the North Pole could generate heat sufficient to warm his nose and toes, coffee and steak. He has what he calls "the lighthouse gang." Four or more locomotive-engine head-lights send their combined rays up a vertical tube three inches in diameter to the top of the lighthouse. There the tube is capped with cowland lens, rotated by a train of clock work in the room below. The rays are projected parallel, or they are sent to locus far, far away from the cowl. This last notion lights up an approaching teeberg and yet retains below deck approaching teeberg and yet retains below deck approaching teeberg and yet retains below deck approaching teeberg and the trains below deck as midnight and critically examine each square inco or hair below the water line. The instrument is not complicated. The electric or other intense light is sent down one of the tubes to a mirror, and through the other tube to the eye of the observer. Twenty-five years ago this instrument was thoroughly tested and rendered invaluable assistance. He can manufacture luge mouth and ear trumpets out of waterproof paper, to be dragged upon boorunners of the same material. These will permit conversation between parties that have become widely separated, and may detect open sea when he constructed out of thin sheet copper, with the can build a wooden oarge that will tow very easily while paying out a submarine telegraph through its bottom. This crait should carry one of John's traction engines, that ha freezing up too soon; a perforated sipe to place along either side of the snip's keel, w blow air